



09/21/00

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PTO/SB/05 (4/98)

Approved for use through 09/30/2000. OMB 0651-0032

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UTILITY PATENT APPLICATION TRANSMITTAL		Attorney Docket No. 500.35453CX1
First Inventor or Application Identified Tomonobu SATO		
Title SYSTEM FOR TRANSFERRING MULTIMEDIA INFORMATION		
Express Mail Label No.		

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

APPLICATION ELEMENTS See MPEP chapter 600 concerning utility patent application contents.		ADDRESS TO: Assistant Commissioner for Patents Box Patent Application Washington, DC 20231	
1. <input checked="" type="checkbox"/> * Fee Transmittal Form (e.g., PTO/SB/17) (Submit an original and a duplicate for fee processing)	5. <input type="checkbox"/> Microfiche Computer Program (Appendix) (if applicable, all necessary)	ACCOMPANYING APPLICATION PARTS 7. <input type="checkbox"/> Assignment Papers (cover sheet & document(s)) 8. <input type="checkbox"/> 37 C.F.R. § 3.73(b) Statement of Attorney (when there is an assignee) 9. <input type="checkbox"/> English Translation Document (if applicable) 10. <input checked="" type="checkbox"/> Information Disclosure Statement (IDS)/PTO-1449 11. <input checked="" type="checkbox"/> Preliminary Amendment 12. <input checked="" type="checkbox"/> Return Receipt Postcard (MPEP 503) (Should be specifically itemized) 13. <input type="checkbox"/> * Small Entity Statement(s) filed in prior application (PTO/SB/09-12) Status still proper and desired 14. <input type="checkbox"/> Certified Copy of Priority Document(s) (if foreign priority is claimed) 15. <input checked="" type="checkbox"/> Other: See 1 in Addendum	
2. <input checked="" type="checkbox"/> Specification [Total Pages 30] (preferred arrangement set forth below) - Descriptive title of the Invention - Cross References to Related Applications - Statement Regarding Fed sponsored R & D - Reference to Microfiche Appendix - Background of the Invention - Brief Summary of the Invention - Brief Description of the Drawings (if filed) - Detailed Description - Claim(s) - Abstract of the Disclosure	a. <input type="checkbox"/> Computer Readable Copy b. <input type="checkbox"/> Paper Copy (identical to computer copy) c. <input type="checkbox"/> Statement verifying identity of above copies		
3. <input checked="" type="checkbox"/> Drawing(s) (35 U.S.C. 113) [Total Sheets 12]			
4. Oath or Declaration [Total Pages 2] a. <input type="checkbox"/> Newly executed (original or copy) b. <input checked="" type="checkbox"/> Copy from a prior application (37 C.F.R. § 1.63(d)) (for continuation/divisional with Box 16 completed)			
i. <input type="checkbox"/> DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).			
* NOTE FOR ITEMS 1 & 13 IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28).			
16. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment: <input checked="" type="checkbox"/> Continuation <input type="checkbox"/> Divisional <input type="checkbox"/> Continuation-in-part (CIP) of prior application No: 08/862,365 Prior application information: Examiner W. Vaughn, Jr. Group / Unit: 2756			
For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.			
17. CORRESPONDENCE ADDRESS			
<input checked="" type="checkbox"/> Customer Number or Bar Code Label: 020457 (Insert Customer No. or Attach bar code label here)		<input type="checkbox"/> Correspondence address below	
Name _____ Address _____ City _____ State _____ Zip Code _____ Country _____ Telephone _____ Fax _____			

Name (Print/Type)	Hung H. Bui	Registration No. (Attorney/Agent)	40,415
Signature	Hung H. Bui	Date	Sept. 21, 2000

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.

Attachment to PTO/SB/05 (4/98) Utility Patent Application
Transmittal

1. - Copy of Assignment from parent application

09665341.00100

FEE TRANSMITTAL

for FY 2000

Patent fees are subject to annual revision.
Small Entity payments must be supported by a small entity statement,
otherwise large entity fees must be paid. See Forms PTO/SB/09-12
See 37 CFR §§ 1.27 and 1.28

TOTAL AMOUNT OF PAYMENT (\$)**690.00**

Complete if Known

Application Number	NEW
Filing Date	September 21, 2000
First Named Inventor	Tomonobu SATO
Examiner Name	
Group / Art Unit	
Attorney Docket No.	500.35453CX1

METHOD OF PAYMENT (check one)

☒ The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to

Deposit Account Number **01-2135**

Deposit Account Name **Antonelli, Terry, Stout & Kraus, LLP**

☒ Charge Any Additional Fee Required Under 37 CFR §§ 1.16 and 1.17

☒ Payment Enclosed;
☐ Check ☐ Money Order ☒ Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity	Small Entity	Fee Code (\$)	Fee Code (\$)	Fee Description	Fee Paid
101	690	201	345	Utility filing fee	690.00
106	310	206	155	Design filing fee	
107	480	207	240	Plant filing fee	
108	690	208	345	Reissue filing fee	
114	150	214	75	Provisional filing fee	
SUBTOTAL (1) (\$)					690.00

2. EXTRA CLAIM FEES

	Extra Claims	Fee from below	Fee Paid
Total Claims	14 - 20** = 0	X	0
Independent Claims	3 - 3** = 0	X	0
Multiple Dependent			0

*or number previously paid, if greater; For Reissues, see below

Large Entity/Small Entity

Fee Code (\$)	Fee Code (\$)	Fee Code (\$)	Fee Code (\$)	Fee Description
103	18	203	9	Claims in excess of 20
102	78	202	39	Independent claims in excess of 3
104	250	204	130	Multiple dependent claim, if not paid
109	78	209	39	** Reissue independent claims over original patent
110	18	210	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$)**0.00**

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity	Small Entity	Fee Code (\$)	Fee Code (\$)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	0.00
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	0.00
139	130	139	130	Non-English specification	0.00
147	2,520	147	2,520	For filing a request for reexamination	0.00
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	0.00
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	0.00
115	110	215	55	Extension for reply within first month	0.00
116	380	216	190	Extension for reply within second month	0.00
117	870	217	435	Extension for reply within third month	0.00
118	1,360	218	680	Extension for reply within fourth month	0.00
128	1,850	228	925	Extension for reply within fifth month	0.00
119	300	219	150	Notice of Appeal	0.00
120	300	220	150	Filing a brief in support of an appeal	0.00
121	260	221	130	Request for oral hearing	0.00
138	1,510	138	1,510	Petition to institute a public use proceeding	0.00
140	110	240	55	Petition to revive - unavoidable	0.00
141	1,210	241	605	Petition to revive - unintentional	0.00
142	1,210	242	605	Utility issue fee (or reissue)	0.00
143	430	243	215	Design issue fee	0.00
144	580	244	290	Plant issue fee	0.00
122	130	122	130	Petitions to the Commissioner	0.00
123	50	123	50	Petitions related to provisional applications	0.00
126	240	126	240	Submission of Information Disclosure Stmt	0.00
581	40	581	40	Recording each patent assignment per property (times number of properties)	0.00
146	690	246	345	Filing a submission after final rejection (37 CFR § 1.1293)	0.00
149	690	249	345	For each additional invention to be examined (37 CFR § 1.1293b)	0.00
Other fee (specify)					0.00
Other fee (specify)					0.00

* Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$)**0.00**

SUBMITTED BY

Name (Print/Type)	Hung H Bui	Registration No (Attorney/Agent)	40,415	Complete (if applicable)	
Signature	<i>Hung H Bui</i>	Telephone	(703) 312-6600	Date	Sept. 21, 2000

WARNING:

Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Tomonobu SATO
Serial No.: NEW
Filed: September 21, 2000
For: SYSTEM FOR TRANSFERRING MULTIMEDI
INFORMATION
Group Art Unit: Not assigned
Examiner: Not assigned

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, DC 20231

September 21, 2000

Sir:

Prior to examination, please amend the above-identified application as follows:

IN THE SPECIFICATION:

Page 1, before line 1: Insert the following:

--CROSS-REFERENCE TO RELATED APPLICATION

This is a continuation of Application
Serial No. 08/862,365, filed May 23, 1997.--

line 2 Change "The multimedia" to --Multi-
media--.

line 6: Change "containing" to --including--.
change "picture" to --pictures--.

line 7: Change "picture" to --pictures--.

line 11: Change "a great deal" to --large
amounts--.

line 21: After "server" insert --,--; delete
"entrusted are".

line 22: After "project" insert --are
entrusted--; --before "a setup" insert
--including--.

Page 2, line 1: Change "great" to --large--.

line 2: Change "deal" to --amount--.

line 16: Change "a" to --an extended--.

line 18: Change "great deal" to --large amount--.

line 27: Change "This difficulty" to --These
difficulties--.

Page 3, line 1: Change "great" to --large--.

line 2: Change "deal" to insert --amount--.

line 3: Change "doing" to --performing--;

line 5: Change "containing" to --including--.

line 10: Change "configured of" to --including--;

line 11: Change "which" to --, the--; change "is"
to --being--.

line 14: After "and" insert --to--.

Page 4, line 6: Change "each" to --the--; change "block"
to --blocks--.

line 7, Delete "basis".

line 13: Change "receive" to --the receipt--.

line 14: After "transmission" insert --of data--.

line 15: Change "are served as transmitting" to
--transmit--.

line 22: Delete "for"; change "is just" to
--receives data--.

line 23: Delete "required to receive".

line 24: Delete "the result".

line 25: Delete "in a manner to divide" and
insert a comma--,--;

line 26: After "data" insert --being divided--;
change "transfer each group" to
--transferred in groups--; and

line 27: Delete "to set".

Page 5, line 1: After "units" insert --being sent--.

line 3: Change "when" to --while--; after
"streams" insert --of data--;

line 4: Change "to store" to --concurrent
storage--; after "display" insert --
of--; after "the" insert --data--;
delete "at a time".

line 28: After "their" insert --performing--.

Page 7, line 21, After "26", insert --29--; and

line 26: Change "concretely," to
--specifically--.

Page 8, line 7: Delete "where".

line 8: After "a" insert --received--; and
delete "to be received".

Page 9, line 13: After "20" insert --, respectively,--.

line 26: Change "do" to --perform--.

line 27: Change "block" to --blocks--.

Page 10, line 7: Change "to" to --for--; change "receive"
to --receipt of data--.

line 10: After "The" insert --received--; delete
"for receive".

line 11: Change "composed of" to --including--.

line 13: Change "is" to --includes--.

line 14: Delete "composed".

line 25: Change "to store" to --the storage of--.

line 26: Change "requests" to--request--.

Page 11, line 1: Change "is composed of" to --includes--.

line 6: Change "to store" to --the storage of--.

line 8: Change "is composed of" to --includes--.

line 14: Change "respect" to insert --aspect--;
after "is" insert --the--.

line 23: Change "firth" to --first--;

line 24: Change "receive" to --reception of
data--.

line 26: Delete "is".

line 27: Change "composed of" to --includes--.

line 28: Change "is" to --includes--.

Page 12, line 1: Delete "composed of".

line 8: Change "to store" to --the storage of--.

line 9: Delete ":".

line 11: Change "contained" to --included--.

line 15: Change "is composed of a" to
--includes--.

line 19: Change "is composed of" to --includes--.

Page 13, line 1: Change "to store" to --the storage of--.

line 3: Change "is the" to --has--.

line 4: Delete "as".

line 5: Change "is composed of" to --includes--.

line 12: Change "to store" to --the storage of--.

line 16: Change "to store" to --the storage of--.

Page 15, line 10: Change "Concretely" to --Specifically--.

line 17: Change "In a case that" to --When--.

line 18: Change "like" to --as in--.

line 21: Change "feeding" to --forwarding--.

Page 17, line 1: Change "checked" to --determined--.

line 7: Change "checked" to --determined--.

Page 18, line 16: Change "operates to update" to
--updates--.

line 18: Change "Concretely" to --Specifically--.

Page 19, line 6: Change "transmission and receive" to
--transmitting and receiving--.

Page 21, line 4: Change "operates to" to --performs--.

line 5: Delete "perform"; change "divide" to
--divides--.

line 6: Change "register" to --registered--.

line 12: Change "contained" to --included--.

Page 22, line 3: Change "operates to update" to
--updates--.

line 15: Change "receive" to --receives--.
line 22: Delete "with".
line 23: After "streams" insert --of multimedia
data--.

Page 23, line 2: Delete the comma ",".
line 7: Change "operates to set" to --sets--.
line 12: Change "to transmit" to --the
transmission of--.
line 20: Change "processed" to --processes--.

Page 24, after line 17, insert the following paragraph:

--While the present invention has been described above in conjunction with preferred embodiments, one of ordinary skill in the art would be enabled by this disclosure to make various modifications to these embodiments and still be within the scope and spirit of the invention as defined in the appended claims.--.

Please **cancel claims 1-13** without prejudice or disclaimer, and
add new claims 14-27 as follows:

1 **--14.** A process of transferring multimedia information in a
2 multimedia information transfer system which comprises a multimedia
3 server, a client server system coupled to said multimedia server
4 via a network, and a matrix table coupled to said multimedia server
5 for status management, said process comprising the steps of:

6 storing and reproducing, at said multimedia server, data
7 streams of multimedia information;

8 dividing said multimedia information, at said multimedia
9 server, into N data block (where N is an integer no less than 2),
10 and each of which N data block includes n data units (where n is an
11 integer no less than 1), sequentially transferring said multimedia
12 information divided into N data blocks to said client server of
13 said client server system on a data block basis, and sending a
14 request to transfer said multimedia information divided into N data
15 blocks from said client server system to a proper field of said
16 matrix table;

17 requesting, at said client server, said multimedia server to
18 divide said multimedia information into N data blocks and to
19 transfer N data blocks of said multimedia information to said
20 client server; and

21 storing and registering, at said client server, the
22 transferred data blocks of said multimedia information, and
23 providing a visual display of said multimedia information
24 concurrently with the storage and registration of said multimedia
25 information.

1 15. The process as claimed in claim 14, wherein said
2 multimedia server, said client server and said one or more clients
3 correspond to different nodes in said network having network
addresses dedicated for communications.

4 16. The process as claimed in claim 14, wherein said matrix
5 table is configured for managing a receiving status and a process
6 request status of said client server system, and wherein said
7 multimedia server sets a request for transferring multimedia
8 information divided into N data blocks from said client server
system to a proper field of said matrix table and transfers said
multimedia information divided into N data blocks based on said
receive status.

1 17. The process as claimed in claim 14, wherein said matrix
2 table includes a transfer status area which indicates whether the
3 transfer of all N data blocks of said multimedia information is
4 complete, and a receive status area which indicates the reception

of said multimedia information, wherein said transfer and receive status areas are updated each time transfer and reception operations are executed.

18. The process as claimed in claim 14, wherein said multimedia information divided into N data blocks is transferred from said multimedia server to said client server of said client server system independently of the update of said transfer and receive status areas of said matrix table.

19. The process as claimed in claim 14, wherein said multimedia information divided into N data blocks, each of said data blocks includes an address for identifying a subject data block, and each of n data units included in each data block includes a data address.

20. The process as claimed in claim 14, wherein said multimedia information includes image information, and when said image information is transferred from said multimedia server to said client, said client operates to specify the address for identifying said data blocks of said image information stored and the data address of a specific one of said data units for reproducing said image information.

1 21. The process as claimed in claim 15, wherein said network
2 addresses dedicated for communications includes one network address
3 dedicated for receiving said multimedia information, and another
4 network address dedicated for transmitting said multimedia
5 information.

1 22. A process of transferring multimedia information from a
2 multimedia server to a client server system through a communication
3 network, comprising:

4 dividing said multimedia information into N data blocks (where
5 N is an integer no less than 2), each of which data block contains
6 n data units (where n is an integer no less than 1), in response to
7 a request by said client server system that said multimedia server
8 transfer said multimedia information divided into N data blocks,
9 each block containing n data units, to said client server system;

10 transferring the requested data blocks of said multimedia
11 information to said client server system on a data block basis; and

12 providing a matrix table having a transfer status area which
13 indicates if a transfer operation of all N data blocks of said
14 multimedia information is complete and a receive status area which
15 indicates if a receive operation of all N data blocks of said
16 multimedia information transferred from said client server system
17 is complete, the transfer operation of said multimedia information

18 divided into N data blocks being executed based on said status
19 information of said matrix table.

1 **23.** The process as claimed in claim 22, wherein said
2 multimedia information divided into N data blocks is transferred
3 from said multimedia server to said client server of said client
4 server system independently of the update of said transfer and
5 receive status areas of said matrix table.

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1 26. A process of receiving multimedia information from a
2 multimedia server at a client server system containing a client
3 server and a plurality of clients coupled to said client server
4 through a communication network, comprising:

5 receiving requests from respective ones of said clients for
6 transfer thereto of multimedia information divided into N data
7 block (where N is an integer no less than 2);

8 receiving said multimedia information divided into N data
9 blocks in a format of data block units, and storing and registering
10 said data blocks in data set areas corresponding respectively to
11 said clients; and

12 reproducing and providing a visual display of said multimedia
13 information of said stored data block while a next data block of
14 said multimedia information is being received.

15 27. The process as claimed in claim 26, wherein said
16 multimedia information includes image information, and when said
17 image information is transferred from said multimedia server to
18 said client, said client operates to specify the address for
19 identifying said data blocks of said image information stored and
20 the data address of a specific one of said data units for
21 reproducing said image information.--
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REMARKS

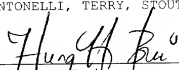
By the foregoing, the parent application is identified in the specification of the present continuation and amendments to the specification made in the parent application are brought forward.

Original claims 1-13 are cancelled in favor of new claims 14-27.

To the extent necessary, applicants petition for an extension of time under 37 C.F.R. 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 of Antonelli, Terry, Stout & Kraus, LLP (referencing Attorney Docket No. 500.35517CX1), and please credit any overpayment of fees to such deposit account.

Respectfully submitted,

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SYSTEM FOR TRANSFERRING MULTIMEDIA INFORMATION

BACKGROUND OF THE INVENTION

The present invention relates to a system for transferring multimedia information. The multimedia information is a generic term for several kinds of digital information coexisting in one information media, those digital information containing digital moving picture, digital still picture, digital text data, and digital audio data. More particularly, the present invention relates to the multimedia information transfer system which is suitable to transferring data from a multimedia server for generating a great deal of multimedia information having streams with high bit rates to a server and a client coupled in a client server system (termed CSS) through a multimedia information network represented as a CATV network or an internet.

In general, the CSS used for business is arranged so that part of work to be processed by a server of the CSS is given to a multimedia server such as an outsourcing center and the processed result is given back to the CSS through a network.

The multimedia server to which entrusted are part or all of the functions about a project, a setup, and a promotion of an information processing system used for

business in an enterprise is required to process a great deal of data streams with high bit rates in order to make good use of the multimedia information for backing up the processing of the CSS. Hence, the multimedia server is generally arranged by the leased hardware, a supercomputer (super parallel machine), a mainframe, a general-purpose server machine, a configuration of standard computers interconnected with one another (distributed architecture), or the like.

- 10 This kind of technology is described in "Technical Trend Toward Video Server Served as Core of VOD" of "Business Communication" November 1994, issued by Business Communication, Ltd., for example.

- When transferring data between different kinds of
15 information processing systems coupled through a communication network, a waiting time for access to the communication network is a significant problem. In particular, when transferring a great deal of data such as multimedia information, the waiting time for access and the
20 transfer time are bottlenecks with regards to efficiency of the transfer system.

- The technology described in the aforementioned publication has difficulty in overcoming the bottleneck in connection with the network and in quickly and efficiently
25 transferring data between the multimedia server and a plurality of CSS servers and between the CSS server and a plurality of clients. This difficulty makes it impossible for a client for using the data transferred thereto to

sufficiently meet the requirements of receiving a great deal of data streams with high bit rates in real time and doing reproducing processes of the multimedia information represented as image data, those reproducing processes
5 containing a fast feed, a stop, and a reverse like reproduction of a video disk, for example.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a system for transferring multimedia information in
10 a system configured of a multimedia server, CSS servers, and clients which system is arranged to simplify transmitting processes between the multimedia server and the CSS server and receiving processes between the CSS server and the client and solve a bottleneck in connection
15 with a network between the CSS server and a plurality of clients for the purpose of keeping the data transfer quick and efficient.

According to the present invention, a multimedia information transfer system includes a multimedia server
20 and a client server system coupled with the multimedia server through a network so that the multimedia server transfers data to a server and clients of the client server system, the multimedia server having means for storing and reproducing data streams of the multimedia information, the
25 client having means for requesting the multimedia server to output data and storing the transferred data and means for displaying the data concurrently when storing the data.

According to an aspect of the present invention, the multimedia server operates to divide the multimedia information into N data blocks (N is an integer of 2 or more), each of which contains n data units (n is an integer of 1 or more), and sequentially transfer the data units to the server of the client server system on each data block basis. Then, the client server system operates to transmit the data block containing n data units to the client for requesting the server to output the data.

10 Further, according to another aspect of the present invention, each network node of the multimedia server and the server and the clients of the client server system has network addresses dedicated for receive and transmission. The multimedia server and the server of the
15 client server system, which are served as transmitting the multimedia information, have their own matrix tables each for managing a receiving status and a process request status on the receiving side and operate to set the request from the receiving side to a field of the matrix and
20 transfer the data based on the status.

According to another aspect of the present invention, the client for requesting the process is just required to receive at the address defined on the receiving side the multimedia information, which is the result
25 processed by the multimedia server in a manner to divide the data into N data blocks and transfer each group of n data units in each data block, and to set a group of n data

units to the defined address. Further, the client provides a function of displaying the streams of the multimedia information concurrently when storing the streams. The client enables to store and display the streams at a time
5 so that the client, by itself, can control a fast feed, a stop, a reverse, and a play in real time.

The multimedia server has a matrix table for managing a process requesting status from the side for requesting the process and a receive status for the
10 processed result data for each service. When the side for requesting the process operates to set the process requesting status and the receive status to the matrix table of the multimedia server, the matrix table reads these statuses in sequence and sets the statuses to the
15 proper fields for the matrix table. Hence, the multimedia server for providing the service is capable of transmitting the processed result data for the services of the CSS server and the clients as viewing the status of the matrix table independently of the update of the matrix table.

20 Further, according to another aspect of the present invention, as mentioned above, the data transfer is executed between the CSS server and the client. Further, the status management of the matrix table and the transmission of the processed result data are allowed to be
25 executed by the device for providing the multimedia server and the CSS server with the services. Hence, the multimedia server, the CSS server, and the client are capable of doing their processes independently of one

another and the two former servers can meet the request from the client and transfer the processed result data.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other objects, features, and advantages of the present invention will become more apparent upon a reading of the following detailed description and drawings, in which:

Fig. 1 is a block diagram showing an arrangement of a system for transferring multimedia information according to an embodiment of the present invention;

Fig. 2 is a view showing a format of a received data status for a client;

Fig. 3 is a view showing a format of a received data set for a client;

Fig. 4 is a view showing a format of a table for each type of process requests for a CSS server;

Fig. 5 is a view showing a format of a matrix table for managing a client status for a CSS server;

Fig. 6 is a view showing a format of a received data status for a CSS server;

Fig. 7 is a view showing a format of a transmission and receive data set for a CSS server;

Fig. 8 is a view showing a format of a transmission data set for a multimedia server;

Fig. 9 is a view showing a format of a matrix table for managing a CSS status for a multimedia server;

Fig. 10 is a view showing a list of objects to be served for a CSS server;

Fig. 11 is a view showing a format of objects to be served for a multimedia server;

5 Fig. 12 is a flowchart (part 1) showing a processing operation of a system for transferring multimedia information according to an embodiment of the present invention; and

Fig. 13 is a flowchart (part 2) to be combined
10 with the flowchart of Fig. 12, showing a processing operation of a system for transferring multimedia information according to an embodiment of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

15 Hereafter, the description will be oriented to a system for transferring multimedia information according to an embodiment of the present invention.

In Fig. 1, a numeral 1 denotes a matrix table for managing a CSS status. A numeral 2 denotes a multimedia
20 server. A numeral 3 denotes a disk unit for storing a data set to be transmitted. Numerals 4, 9, 18, 23, 26 and 32 denote LAN adapters provided with network addresses dedicated for transmission. Numerals 5, 8, 17, 22, 25, 28 and 31 denote LAN adapters provided with network addresses
25 dedicated for receive. A numeral 6 denotes a communication network, concretely, a wide area network (WAN) which is larger in scale than the LAN. Numerals 7, 36, and 37

denote interface devices coupled through the LAN. Numerals 10 and 24 denote CSS servers. A numeral 11 denotes a harddisk where a data set to be received or transmitted is registered. Numerals 12, 16 and 21 denote statuses for
5 received data. A numeral 13 denotes a matrix table for managing a client status. Numerals 14, 19, 27 and 30 denote clients. Numerals 15 and 20 denote harddisks where a data set to be received is registered. A numeral 38 denotes a display unit coupled to each client.

10 Moreover, the network addresses dedicated for transmission of the LAN adaptors 4, 9, 18, 23, 26, 29 and 32 may be made to be identical with the network addresses dedicated for receive of the LAN adaptors 5, 8, 17, 22, 25, 28 and 31. That is, one LAN adaptor having a single
15 network address may have both of the transmitting and receiving functions.

The system according to an embodiment of the invention, as shown in Fig. 1, includes devices on the multimedia server side for backing up the CSS and a
20 plurality of devices on the CSS side coupled through the network 6 such as the WAN and LAN devices 37, 7 and 36.

The devices on the multimedia server side includes the multimedia server 2 for backing up the CSS, the matrix table 1 for managing the statuses of the
25 processes requested by the CSS side coupled to this server 2 and of the processed result data, a disk device 3 for storing a data set of the processed result to be

transmitted to the CSS side, a service list 34 where the CSS's to be served are registered at network addresses dedicated for the outputs, and the LAN adaptors 4 and 5 coupled to the LAN device 37.

5 One of the devices on the CSS side is arranged to have the CSS server 10 and the clients 14 and 19 coupled through the LAN adaptors 8, 9, 17, 18, 22, and 23 and the LAN device 7. The CSS server 10 is coupled to the disk device 11 for storing a data set of the processed result
10 received from the multimedia server 2 and another data set to be transmitted to the client, a received data status 12, a table for each type of processed request, and the service list 33. The clients 14 and 19 are coupled to the disk devices 15 and 20 for storing the data sets of the
15 processed result received from the multimedia server 2 and the received data statuses 16 and 21. The CSS server 24 and the clients 27 and 30 on the CSS side have the same arrangement as the foregoing devices on the CSS side.

In turn, the description will be oriented to the
20 formats of the tables, the lists, the statuses and the like coupled to the foregoing multimedia server 2, the CSS server 10, and the clients 14 and 19, respectively, with reference to the appended drawings.

The received data statuses 16 and 21 coupled to
25 the clients 14 and 19 are referenced and updated when the client requests the CSS server to do a process and receive the data block of the processed result. As shown in Fig. 2, the status 16 or 21 is composed of network addresses 40

to 43 dedicated for input and output of the CSS server and the subject client, a process request date 44, a process request time 45, a process request ID 46, a status update flag 47, and receive flags 48 to 50 for the first to the N-
5 th data blocks (N is an integer of 2 or more).

The network addresses 40 to 43 may use a single common network address to transmission and receive in place of the network addresses dedicated for transmission and receive.

10 The data set for receive registered in the harddisk 15 or 20 has a format composed of header information 51 and the first to the N-th data blocks 52 to 54 as shown in Fig. 3. The header information 51 is composed of network addresses 55 to 58 dedicated for inputs
15 and outputs of the CSS server and the subject client, the process request date 59, the process request time 60, and the process request ID 61, which format is the same as that described with reference to Fig. 2.

Each data block includes n (n is an integer of 1
20 or more) data units 200 and a header 201 at the head of the data. The header 201 contains a data block number and a data unit number stored as address information.

The table for each type of process request 35 coupled to the CSS server 10, as shown in Fig. 4, enables
25 to store m (m is an integer of 1 or more) pieces of information 62 to 65 for each type of process requests. Each piece of information for each type of process request

is composed of a process request ID 66 of a client, a backup processing flag 67, and a maximum value of a service time of the CSS server.

The matrix table 13 for managing a client status coupled with the CSS server 10, as shown in Fig. 5, enables to store m pieces of status information 69 to 72 for the process requests given by the clients. Each status information is composed of network addresses 73 to 76 dedicated for inputs and outputs of the CSS server and the clients, which are similar to the network addresses described with reference to Fig. 2, a process request date 77, a process request time 78, a process request ID 79, and receive flags 81 to 83 for the first to the N -th data blocks. The different respect of Fig. 5 from Fig. 2 is provision of a transfer completion flag 80 in place of a status update flag.

The received data status 12 coupled to the CSS server 10, as shown in Fig. 6, is composed of network addresses 84 to 89 dedicated for inputs and outputs of the multimedia server, the CSS server, and the clients, a process request date 90, a process request time 91, a process request ID 92, a status update flag 92, and receive flags 94 to 96 for the first to the N -th data blocks.

The data set for transmission and receive, registered in the disk device 11 coupled to the CSS server 10, has such a format as shown in Fig. 7. The format is composed of a header information 97 and the first to the N -th data blocks 98 to 100. The header information 97 is

composed of network addresses 101 to 106 dedicated for inputs and outputs of the multimedia server, the CSS server, and the clients, which are the same network addresses as those described with reference to Fig. 6, a process request date 107, a process request time 108, and a process request ID 109.

The service list 33 coupled to the CSS server 10, as shown in Fig. 10, enables to store n (n is an integer number.) network addresses 180 to 183 dedicated for outputs of the clients served by the subject CSS server 10.

The data set for transmission contained in the disk device 3, which stores the data set of the processed result to be transmitted to the CSS side coupled to the multimedia server 2, has such a format as shown in Fig. 8. The format is composed of a header information 110 and the first to the N -th data blocks 111 to 113. The header information 110 is the same as that described with reference to Fig. 7. That is, the header information 110 is composed of network addresses 114 to 119 dedicated for inputs and outputs of the multimedia server, the CSS server and the clients, a process request date 120, a process request time 121, and a process request ID 122.

Each data block includes n (n is an integer of 1 or more) data units 300. Further, a header 301 is included at the head of the data. The header 301 saves a data block number and a data unit number as address information.

The matrix table 1 for managing the CSS status, which table is coupled to the multimedia server 2, enables

to store m pieces of status information 123 to 126 for the process requests given by the CSS servers as shown in Fig. 9. Each status information is the similar composition to that as described with reference to Fig. 5. That is, each status information is composed of network addresses 127 to 132 dedicated for inputs and outputs of the CSS servers, the clients and the multimedia server, a process request date 133, a process request time 134, a process request ID 135, a transfer completion flag 136, and receive flags 137 to 139.

The service list coupled to the CSS server side, as shown in Fig. 10, enables to store n network addresses 180 to 183 dedicated for outputs of the clients served by the subject CSS server.

The service list 34 coupled to the multimedia server 2, as shown in Fig. 11, enables to store n network addresses 184 to 187 dedicated for outputs of the CSS servers served by the subject multimedia server 2.

As set forth above, according to an embodiment of the invention, the system configured of the multimedia server, the CSS server and the clients is arranged to simplify a transmitting process between the multimedia server and the CSS server and the receiving process between the CSS server and the clients and solve the bottleneck in networking between the multimedia server and CSS servers and between the CSS server and the clients for the purpose of quickly and efficiently transferring the data.

In turn, the description will be oriented to the operation of transferring the multimedia information in the system according to the foregoing embodiment of the invention with reference to Figs. 12 and 13. In this
5 embodiment of the invention, the clients, the CSS server and the multimedia server are operated independently of one another. Further, the multimedia server operates to back up the process executed by the CSS server. In response to the request given from the CSS server, the multimedia
10 server operates to transfer the multimedia information generated by the multimedia server itself to the CSS server. Further, the CSS server operates to transfer the received multimedia information to the client for requesting the multimedia information.

15 At first, the processing on the client side will be described.

(1) Now, assume that a process request is issued for transferring the multimedia information to the multimedia server 2. In response to the request, the
20 client 14 operates to set a process request status to the received data 16 and waits for the processed result data transferred from the CSS server 10 (steps 140 and 141).

(2) As will be described below, the CSS server 10 performs the process requested by the client 14 or
25 entrusts the process to the multimedia server 2. After obtaining the data of the processed result, the CSS server 10 or the multimedia server 2 operates to transfer the data to the client 14. The data of the processed result is

divided into N data blocks, and each group of n data units of each data block is transferred back to the client 14 in sequence. The client 14 receives the processed result at each group of n data units (step 142).

5 (3) The process is executed for registering the processed result data received from the CSS server 10 in the harddisk 15 for storing the data set for receive (step 143). The received data status 16 is updated according to the receive status of the processed result data of the
10 client 14 (step 144). Concretely, the data block receive flags for the statuses 48, 49, 50 and the like as shown in Fig. 2 are set, and the status update flag 47 is set as well.

When all n data units contained in one data block
15 are received, in response to the display request from the display unit 38, n pieces of data units are displayed on the screen (steps 146 and 147). In a case that the image information is displayed, like the playback of a video disk, for example, the image section at any position is
20 selectively displayed by specifying an address. Further, the still playback, the fast feeding or the reversing are also made possible.

(4) It is checked if all N data blocks are received. If it is not completed, the process from the
25 step 142 is repeated (step 145).

(5) In the check at the step 145, if the receipt of all N data blocks is completed, the process is terminated.

In addition, the client 14 enables to display the received data concurrently with the receipt of each group of n data units.

Next, the description will be oriented to the
5 process executed by the CSS server.

(6) The CSS server 10 operates to sequentially read the received data statuses 16 and 21 of the client where the client itself sets the process request at the step 141 as referring to the service list 33 (step 148).

10 (7) After reading the received data status 16 set by the client 14 for the purpose of the process request at the step 141, the CSS server 10 operates to add the network address 40 dedicated for an input of the CSS server, the network address 41 dedicated for an output of
15 the CSS server, the network address 42 dedicated for an input of the client, the network address 43 dedicated for an output of the client, the process request date 44, the process request time 45, and the process request ID 46, all of which are shown in Fig. 2, to the matrix table 13 for
20 managing the client status as the data items 73 to 79 shown in Fig. 5. If the received data status 16 has no content, the record of the fact is added to the matrix table 13 (step 149).

(8) By reading the table 35 for each type of
25 process request, it is checked if the request for the process is to be backed up by the multimedia server (steps 150 and 151).

(9) If it is checked that the request for the process is not to be backed up at the step 151, the process request is determined to be executed by the subject CSS server. In response to the process request from the client
5 14, the CSS server operates to perform the requested process (step 152).

(10) It is checked if the process at the step 152 is terminated within a MAX value 68 of the service time of the CSS server in the record set to the table 35 for
10 each type of process request shown in Fig. 6 (step 153).

(11) If in the determination at the step 153 the process at the step 152 is terminated within the MAX value of the service time, the multimedia information created at the step 152 is divided into N data blocks and then are
15 registered as the data set for transmission and receive in the disk 11 (step 154).

(12) If in the determination at the step 151 the process request ID 79 of the record added to the matrix table 13 for managing the client status at the step 149 is
20 the same as the process request ID 66 contained in the process request table 35, the flag 67 for backing up the record is set, and the process request is determined to be the back-up request, or if in the determination at the step 153, the process at the step 152 is determined not to be
25 terminated within the MAX value of the service time, the CSS server operates to set the process request read from the client to the received data status 12 shown in Fig. 6

and waits for the processed result data transferred from the multimedia server 2 (step 158).

(13) As will be described below, the multimedia server 2 performs the process requested by the CSS server 10 and, if the processed result data is obtained, transfers the data to the CSS server 10. The processed result data is divided into N data blocks, and each group of n data units contained in each data block is transferred to the CSS server one group by one group. The CSS server 10 receives the processed result at each group of n data units (step 159).

(14) The CSS 10 server performs a process for registering the processed result data received from the multimedia server 2 in the harddisk 11 for storing the data set for transmission and receive (step 160). Then, the CSS server 10 operates to update the received data status 12 according to the processed result data received status of the CSS server 10 itself (step 161). Concretely, the data block receive flags for the statuses 94, 96, 96 and the like shown in Fig. 6 are set and the status update flag 93 is set as well.

If all n data units are received in one data block at a step 161, the operation goes to a step 155, at which the content of the matrix table for managing the client status shown in Fig. 5 is read.

(15) It is checked that the receipt of all N data blocks is completed. If not completed, the process

from the step 159 is repeated (step 162). If all N data blocks are received, the process is terminated.

(16) At a step 154 (see Fig. 12), the data of the processed result given by the subject CSS server 10 is registered in the harddisk 11 for storing the data set for transmission and receive. On the termination of the process, the matrix table 13 for managing the client status shown in Fig. 5 is read in sequence (step 155).

(17) If a transfer completion flag 80 in the matrix table 13 for managing the client status is set and all the receive flags from the first to the N-th data block receive flags 81 to 83 are set, the corresponding records are deleted from the matrix table 13 for managing the client status, and the process is terminated (steps 156 and 157).

(18) If it is determined that the transfer completion flag 80 is off by referring to the matrix table 13 for managing the client status, the process for transmitting standby data blocks at each group of n data units is executed by repeating the process from the step 155. On the termination of transferring all N data blocks, the transfer completion flag 80 is set (step 163).

(19) The received data statuses 16 and 21 updated by the client 14 at the step 144 are read in sequence (step 164).

(20) The content of the received data status 16 is checked. If the status update flag 47 is set, the matrix table 13 for managing the client status is updated

and if the transfer of the N data blocks is terminated, the transfer completion flag 80 is set. If the flag 47 has been already off, nothing is executed (step 165).

Of the foregoing processes of the CSS server, the 5 processes at the steps 155 to 157 and 163 are executed in parallel to and independently of the processes at the steps 164 and 165.

In turn, the description will be oriented to the process of the multimedia server.

10 (21) The multimedia server 2 operates to sequentially read the received data status 12 of the CSS server where the process request is set by the CSS server itself at the step 158 by referring to the service list 34 (step 166).

15 (22) The multimedia server 2 operates to read the received data status 12 of the client set by the CSS server 10 for the process request at the step 158 and to add a record composed of the network address 127 dedicated for an input of the multimedia server, the network address 20 dedicated for an output of the multimedia server, the network address 129 dedicated for an input of the CSS server, the network address 130 dedicated for an output of the CSS server, the network address 131 dedicated for an input of the client, the network address 132 dedicated for 25 an output of the client, the process request date 133, the process request time 134, the process request ID (Identification Information) 135 to the matrix table 1 for managing the CSS status shown in Fig. 9. If the received

data status 12 has no content, the record of the fact is added. Then, the update flag 93 is off (step 167).

(23) In response to the process request issued by the CSS server 10, the multimedia server operates to
5 perform a backup operation, divide the created multimedia information into N data blocks, and register them as a data set for transmission in the disk 3 (steps 168 and 169).

(24) The multimedia server operates to sequentially read the matrix table 1 for managing the CSS
10 status shown in Fig. 9 updated at the step 167 (step 170).

(25) If the transfer completion flag 136 contained in the matrix table 1 for managing the CSS status is set and all receive flags from the first to the N-th data block receive flags 137 to 139 are set, the
15 corresponding records are deleted from the matrix table 1, and then the process is terminated (steps 171 and 175).

(26) If it is determined that the transfer completion flag 136 is off by referring to the matrix table 1, the process for transmitting the standby data blocks to
20 the corresponding CSS sever 10 at each group of n data units is executed by repeating the process from the step 170. On the termination of all N data blocks, the transfer completion flag 136 is set (step 172).

(27) The multimedia server operates to
25 sequentially read the received data status 12 of the CSS server which is updated by the CSS server 10 at the step 161 (step 173).

(28) The content of the received data status 12 is checked. If the status update flag 93 is set, the multimedia server operates to update the matrix table 1 for managing the CSS status. If the transfer of all N data 5 blocks is completed, the transfer completion flag 136 is off. If the flag 136 has been already off, nothing is executed (step 174).

Of the foregoing processes of the multimedia server, the processes at the steps 170 to 172 are executed 10 in parallel to and independently of the processes at the steps 173 and 174.

In the foregoing embodiment of the invention, the client for issuing the process request is just required to receive the multimedia information from the multimedia 15 server at the address defined on the receive side and set each group of n data units to the address. As mentioned above, the multimedia information is the result processed by the multimedia server. The multimedia information is divided into N data blocks and is transferred at each group 20 of n data units of each data block. Further, the streams of the multimedia information are allowed to be displayed concurrently with when those streams are stored. The storage of streams at each group of n data units being received is executed in parallel with and concurrently with 25 the display of one previous received group of n data units. Like the playback of the video disk, the client thus provides a capability of controlling a fast feed, a stop, a

reverse, a playback of the multimedia information in real time,

The multimedia server includes a matrix table for managing the process request status and the processed
5 result data received status from the side for requesting the process at each service. When the requesting side operates to set the process request status and the processed result data received status from the requesting side, the multimedia server operates to sequentially read
10 these statuses and set the statuses to the corresponding fields of the matrix table. The multimedia server that is a provider of the service enables to transmit the processed result data to the service such as the CSS server or the client as viewing the status of the managing matrix table
15 independently of the update of the matrix table.

Further, according to the embodiment of the invention, the data transfer between the CSS server and the client is made possible like the foregoing operation. The multimedia server, the CSS server, and the client are
20 executing their processed independently of one another while the process request and the processed result data are transferred among the CSS server, the multimedia server, and the client.

As set forth above, according to the present
25 invention, the data of the result processed by the multimedia server is divided into N data blocks and each group of n data units of each data block is transferred to the address defined by the receiving side. The multimedia

server, the CSS server, and the client are thus capable of executing their processes independently of one another. Hence, the multimedia server, the CSS server, and the client are reduced in scale as securing a response to the
5 request from the client.

In case the multimedia server is coupled to two or more CSS servers or the CSS server is coupled to two or more clients, the system according to the invention can solve the bottleneck in networking between the multimedia
10 server and the CSS servers and between the CSS server and the clients. Further, according to the present invention, only the side for transmitting the processed result data, such as the multimedia server or the CSS server, operates to transmit the data. Hence, the CSS arrangement may be
15 dynamically changed. Besides, even in this case, the present invention offers an effect that the client side does not need any modification.

WHAT IS CLAIMED IS:

1. A multimedia information transfer system having a multimedia server and a client server system coupled to said multimedia server through a network and for
5 transferring data from said multimedia server to a server and one or more clients included in said client server system, comprising:
said multimedia server having means for storing and reproducing data streams of said multimedia
10 information; and
said client having means for requesting said multimedia server to transfer said data and storing said transferred data and means for displaying said data concurrently with the storage of said data.
- 15 2. A system as claimed in claim 1, wherein said multimedia server has means for dividing said multimedia information into N (N is an integer of 2 or more) data blocks, each of which contains n (n is an integer of 1 or more) data units, and sequentially transferring said
20 multimedia information to said server of said client server system on each data block basis, and said client server system has means for transmitting each of said data blocks containing n data units to said client for requesting said server to output said data.
- 25 3. A system as claimed in claim 2, wherein nodes on the network corresponding to said multimedia server, said server of said client server system, and clients include network addresses dedicated for communications,

respectively, said multimedia server and said server of said client server system served as a transmitting side for said multimedia information include matrix tables for managing a receive status and a process request status of said client server system, respectively, and said multimedia server operates to set a request for transferring data from said client server system to a proper field of said matrix table and transfer said data based on said receive status.

4. A system as claimed in claim 3, wherein said matrix table includes a transfer status area for indicating if the transfer operation of said divided multimedia information is completed and a receive status area for indicating the receive operation of said multimedia information, and said status areas are updated each time said transfer and receive operations are executed.

5. A system as claimed in claim 4, wherein the transfer operation of said divided multimedia information from said multimedia server to said server of said client server system is executed independently of the update of the status areas of said matrix table.

6. A system as claimed in claim 4, wherein the transfer operation of said divided multimedia information from said server of said client server system to said client is executed independently of the update of the status areas of said matrix table.

7. A system as claimed in claim 2, wherein said divided multimedia information contains N data blocks, each

of said data blocks contains an address for identifying the subject data block, and each of n data units contained in each data block has a data address.

8. A system as claimed in claim 7, wherein said
5 multimedia information includes image information, and if said image information is transferred from said multimedia server to said client, said client operates to specify the address for identifying said data block of the stored image information and the data address of a specific one of said
10 data units for the purpose of reproducing said image information.

9. A system as claimed in claim 3, wherein said network address dedicated for communication includes one network address dedicated for receive and the other network
15 address dedicated for transmission.

10. A multimedia server for transferring multimedia information to a client server system through a communication network in response to a transfer request for said multimedia information from said client server system,
20 comprising:

means for dividing said multimedia information into N (N is an integer of 2 or more) data blocks, each data block containing n (n is an integer of 1 or more) data units;

25 means for transferring said data blocks to said client server system on each data block basis; and

a table having a transfer status area for indicating if a transfer operation of said divided

multimedia information is completed and a receive status area for indicating if a receive operation of said data blocks transferred from said client server system is completed, the transfer operation of said divided

5 multimedia information being executed based on said status information of said table.

11. A client server system containing a server and a plurality of clients coupled to said server and for receiving multimedia information from a multimedia server
10 through a communication network, comprising:

means for receiving said multimedia information composed of plural data blocks at each data block unit and storing said data blocks; and

display means for reproducing and displaying said
15 multimedia information of said stored data block while the next data block of said multimedia information is being received.

12. A storage medium for storing a program code read and executed by a computer, comprising:

20 a first section for storing a program code for dividing multimedia information into N (N is an integer of 2 or more) data blocks, each data block containing n (n is an integer of 1 or more) data units in response to a transfer request for multimedia information from said
25 client server system;

a second section for storing a program code for transferring said data blocks to said client server system

at each data block unit based on status information stored in a table; and

a third section for storing a program code for generating transfer status information for indicating if a transfer operation of said divided multimedia information is completed, receiving receive status information for indicating if a receive operation of said data blocks transmitted from said client server system is completed, and storing said transfer and receive status informations in a table.

13. A storage medium for storing a program code read and executed by a computer, comprising:

a first section for storing a program code for receiving multimedia information composed of plural data blocks transmitted from a multimedia server at each data block unit and storing said data blocks;

a second section for storing a program code for reproducing and displaying the multimedia information composed of said stored data block while the multimedia information of the next data block is being received; and

a third section for storing a program code for generating receive status information for indicating if a receive operation of said data blocks is completed and transmitting said receive status information to said multimedia sever.

ABSTRACT OF THE DISCLOSURE

A multimedia information transfer system includes a multimedia server and a client server system coupled with the multimedia server through a communication network and transfers data transmitted from the multimedia server to a server of the client server system. The multimedia server stores data streams of the multimedia information and reproduces the information. The client requests the multimedia server to transfer data, stores the transferred data block and displays the stored data block concurrently with the storage of the next coming data block.

2025 RELEASE UNDER E.O. 14176

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Tomonobu SATO
Serial No.: NEW
Filed: September 21, 2000
For: SYSTEM FOR TRANSFERRING MULTIMEDI
INFORMATION
Group Art Unit: Not assigned
Examiner: Not assigned

LETTER SUBMITTING FORMAL DRAWINGS

Assistant Commissioner for Patents
Washington, DC 20231

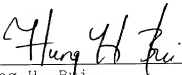
September 21, 2000

Sir:

Attached are 12 sheets of formal drawings illustrating FIGS.
1-13 in connection with the above-identified application.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP


Hung H. Bui
Reg. No. 40,415

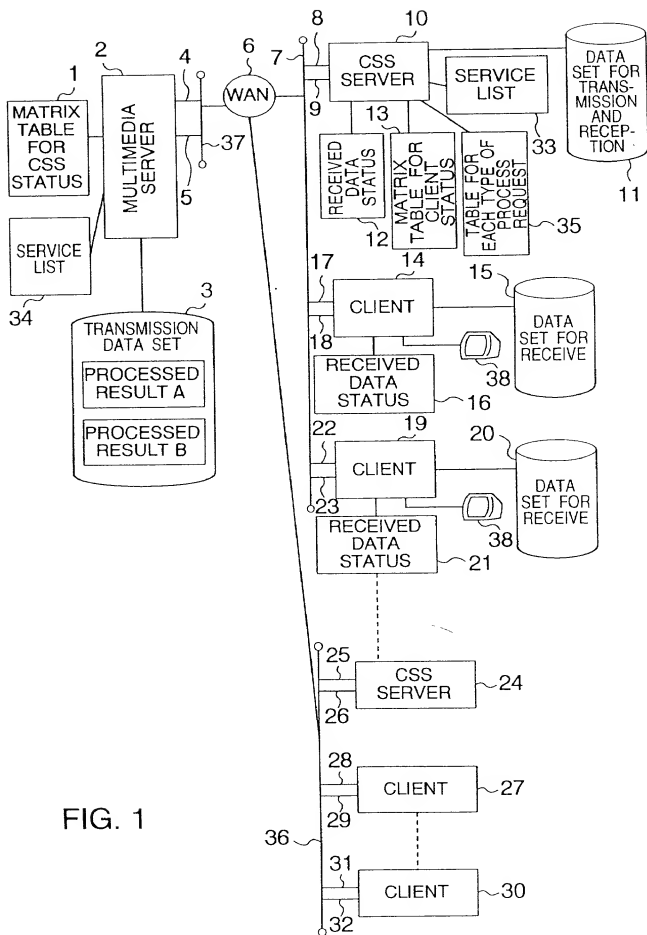


FIG. 2

RECEIVED DATA STATUS (CLIENT SIDE)

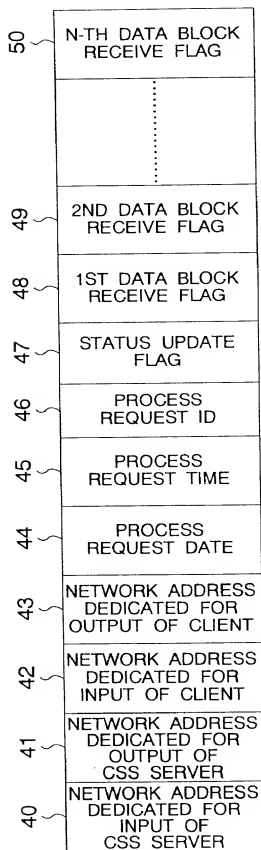


FIG. 3

RECEIVED DATA SET FORMAT (CLIENT SIDE)

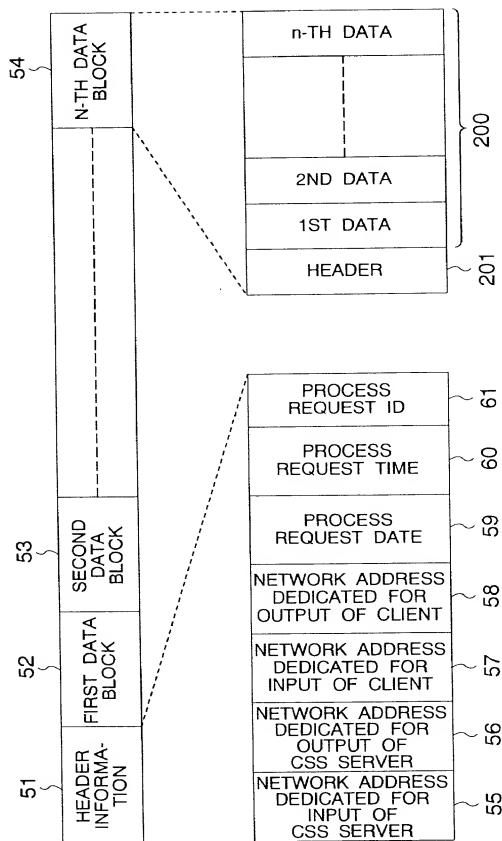


FIG. 4

TABLE FOR EACH TYPE OF PROCESS REQUEST

62 PROCESS REQUEST TYPE INFORMA- TION 1	63 PROCESS REQUEST TYPE INFORMA- TION 2	64 PROCESS REQUEST TYPE INFORMA- TION 3	65 PROCESS REQUEST TYPE INFORMA- TION m

66 PROCESS REQUEST ID	67 BACK-UP PROCESS FLAG	68 CSS SERVER SERVICE TIME MAX VALUE
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FIG. 6

RECEIVED DATA STATUS (CSS SERVER SIDE)

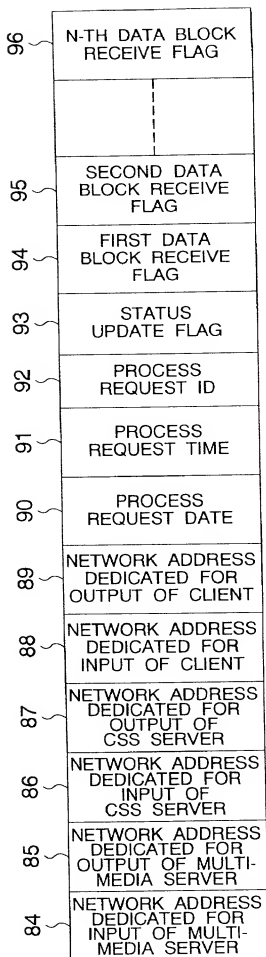
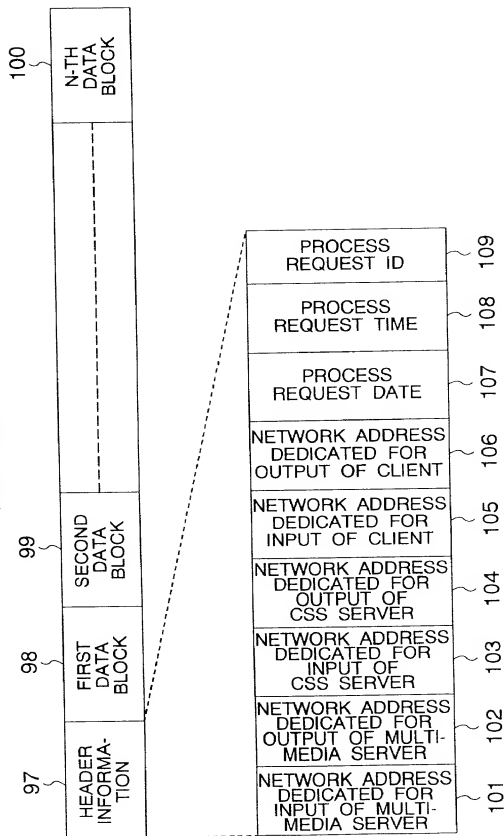


FIG. 7

DATA SET FORMAT FOR TRANSMISSION AND RECEIVE
(CSS SERVER SIDE)



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DATA SET FORMAT FOR TRANSMISSION
(MULTIMEDIA SERVER SIDE)

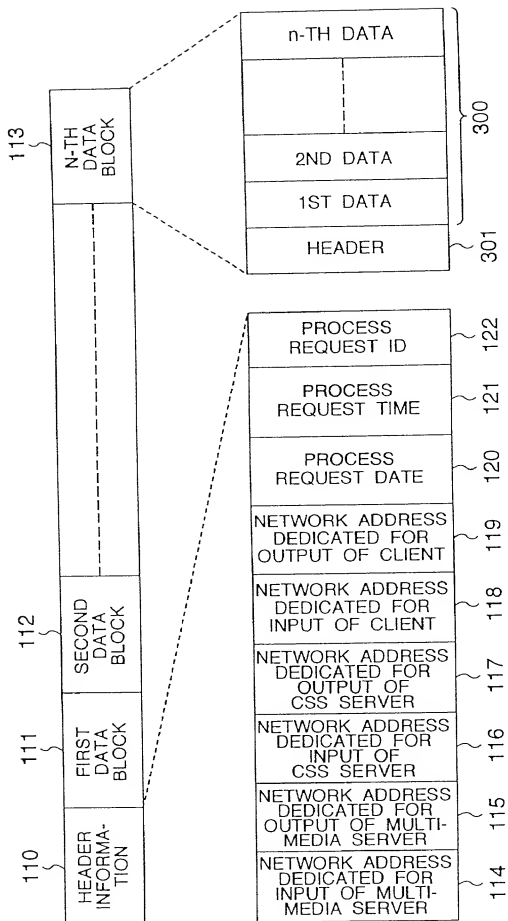


FIG. 10

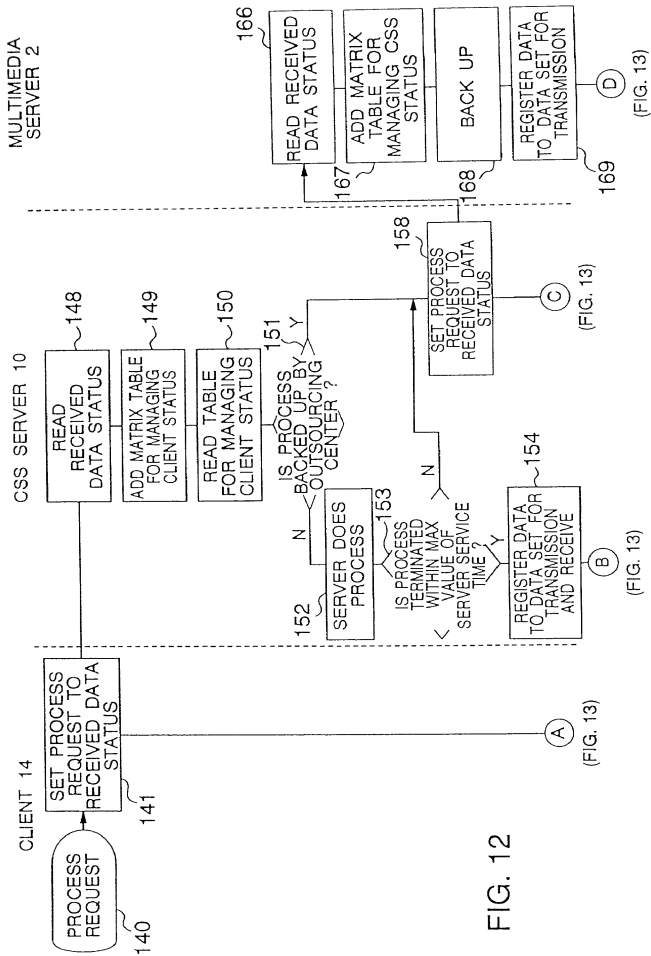
SERVICE LIST (CSS SERVER SIDE)

180	181	182	183
NETWORK ADDRESS 1 DEDICATED FOR OUTPUT OF CLIENT	NETWORK ADDRESS 2 DEDICATED FOR OUTPUT OF CLIENT	NETWORK ADDRESS 3 DEDICATED FOR OUTPUT OF CLIENT	NETWORK ADDRESS n DEDICATED FOR OUTPUT OF CLIENT

FIG. 11

SERVICE LIST (MULTIMEDIA SERVER SIDE)

184	185	186	187
NETWORK ADDRESS 1 DEDICATED FOR OUTPUT OF CSS SERVER	NETWORK ADDRESS 2 DEDICATED FOR OUTPUT OF CSS SERVER	NETWORK ADDRESS 3 DEDICATED FOR OUTPUT OF CSS SERVER	NETWORK ADDRESS n DEDICATED FOR OUTPUT OF CSS SERVER



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Tomonobu SATO
Serial No.: NEW
Filed: September 21, 2000
For: SYSTEM FOR TRANSFERRING MULTIMEDI
INFORMATION
Group Art Unit: Not assigned
Examiner: Not assigned

REQUEST FOR APPROVAL TO AMEND DRAWINGS

Assistant Commissioner for Patents
Washington, DC 20231

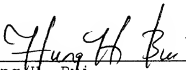
September 21, 2000

Sir:

Please amend FIGS. 1, 8, and 12 as indicated in red on the attached copies. These drawing corrections were approved in parent Application Serial No. 08/862,365, filed May 23, 1997, and are reflected in the formal drawings being filed concurrently herewith.

Respectfully submitted,

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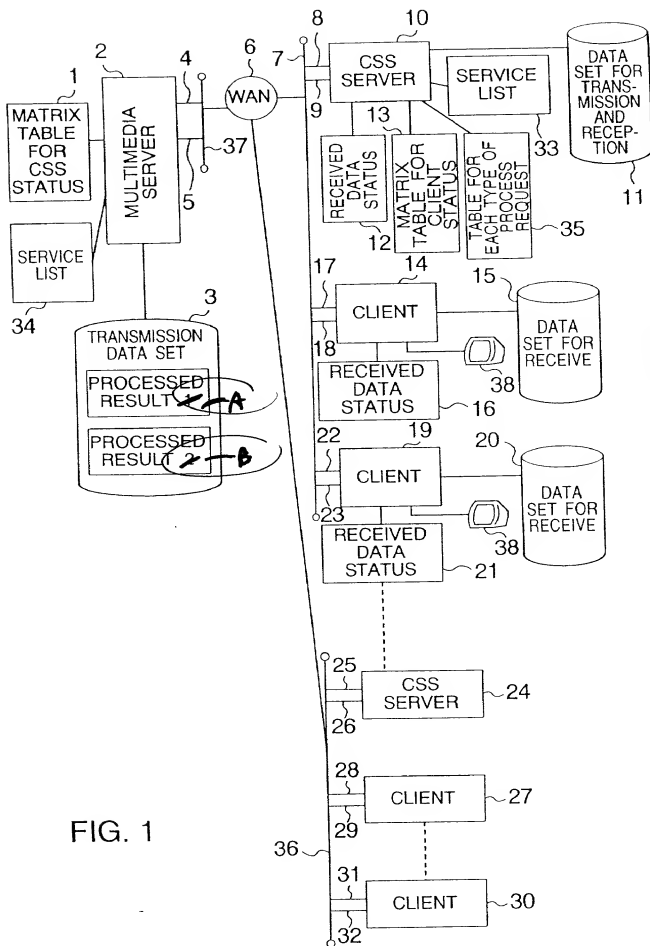
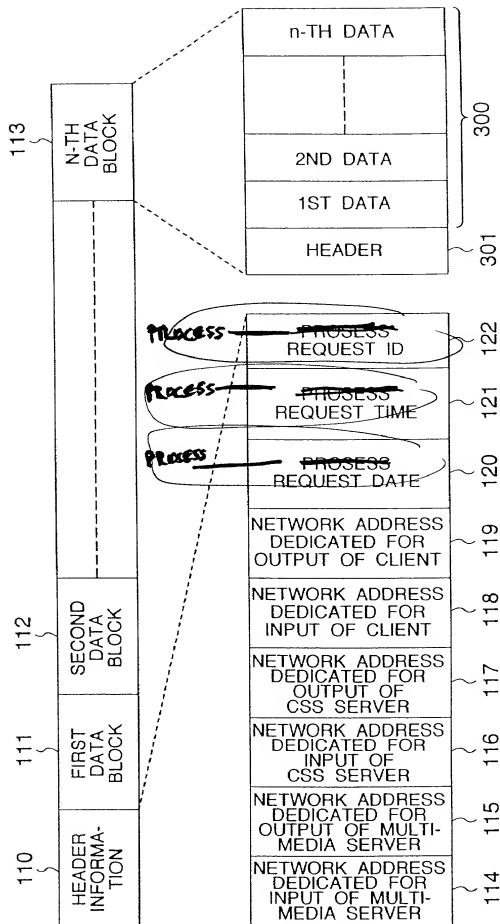
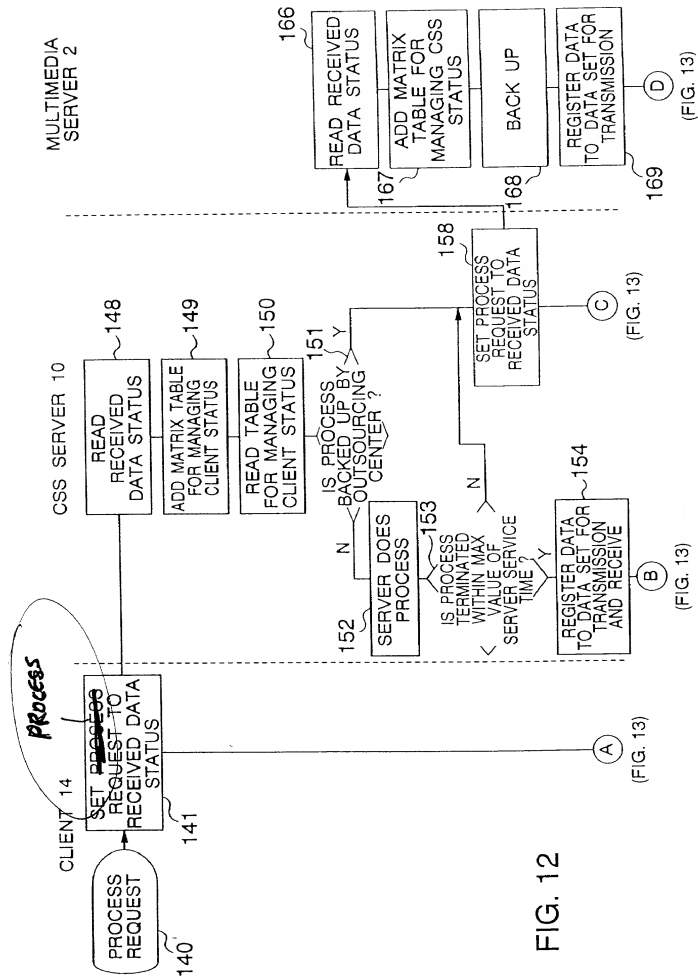


FIG. 1

FIG. 8
DATA SET FORMAT FOR TRANSMISSION
(MULTIMEDIA SERVER SIDE)





DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name. I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

"SYSTEM FOR TRANSFERRING MULTIMEDIA INFORMATION"

the specification of which (check one)



is attached hereto.



was filed on _____
as Application Serial No. _____
and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

Priority Claimed

08-133651 (Number)	Japan (Country)	28 May, 1996 (Day/Month/Year Filed)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112 I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

(Application Serial No.)	(Filing Date)	(Status: patented, pending, abandoned)
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(Application Serial No.)	(Filing Date)	(Status: patented, pending, abandoned)

I hereby appoint as principal attorneys; Donald R. Antonelli, Reg. No. 20,296; David T. Terry, Reg. No. 20,178; Melvin Kraus, Reg. No. 22,466; Stanley A. Wal, Reg. No. 26,432; William I. Solomon, Reg. No. 28,565; Gregory E. Montone, Reg. No. 28,141; Ronald J. Shore, Reg. No. 28,577; Donald E. Stout, Reg. No. 26,422; Alan E. Schiavelli, Reg. No. 32,087; James N. Dresser, Reg. No. 22,973 and Carl I. Brundidge, Reg. No. 29,621 to prosecute and transact all business connected with this application and any related United States application and international applications. Please direct all communications to the following address:

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

[illegible]